

An Android Mobile App for Women's Safety

Giri Babu K¹[0009-0001-7348-139x]

K Ambika²

Badepally Mallaih³

CVR College of Engineering Hyderabad, Telangana

Abstract:- Women's safety is a major concern and has been the most important issue. Women's safety is of great importance, whether at home, outside the home, or in the workplace. Few crimes against women, especially rape, are horrible and frightening. Most women of different ages are still exposed to violence and domestic abuse today. Since women are usually out late at night, it is necessary to be vigilant and safe. Although the government is taking the necessary measures for their safety, there are still free safety apps for women that can help them stay safe. Most women nowadays carry their smartphones with them, so installing at least one personal safety app is necessary. Such a security app for women will be helpful in one way or another. It is a user-friendly application that can be accessed by anyone who has it installed on their smartphone. Our intention is to provide you with the fastest and easiest way to contact the nearest help. . In this case, the user must provide three call numbers. If a crisis arises, the system will send an SMS with a specific location and make calls to one of the numbers entered. The phone starts to ring, and the siren starts to vibrate. This has daily safety features as well as real emergency capabilities, making it an all-purpose generator.

Keywords: Smartphones, Android, Sms.

I. INTRODUCTION

➤ Motivation

The development of technology has given us a vast array of options for communication, regardless of location. Smartphones provide a wide range of functions that improve the users' quality of life and make their lives easier. The number of features and capabilities available on portable mobile phones is growing daily at a startling rate. Because of this, we decided to design an Android application that would allow us to expand our expertise in mobile application development. We see this project as a fantastic opportunity to integrate a variety of technologies and languages into a single software system and develop our teamwork skills. . The task of finding solutions to every issue that arises while the project is being developed was a significant source of inspiration for us. Additionally, we needed to create a programme that was portable, dependable, secure, stable, and user-friendly. Women's safety is a topic that is frequently discussed, yet nothing is being done to stop harmful situations. Even now, we hear about a lot of tragic instances involving women. We attempted to create an Android application to assist the users

as and when they are in danger and need support in order to take tangible measures to help the general public and ladies.

➤ Problem Statement

- The 'Women safety app' project is an Android mobile application. In an emergency, this programme gives women the option to request assistance.
- When necessary, by hitting the volume button, it sends the SMS of the GPS position and calls one of the saved contacts in the database.
- The users must register for the programme by entering their cell numbers and saving the emergency contact numbers.

II. LITERATURE SURVEY

Women's security is a subject that is raising more concerns. Numerous tragic events involving women have been reported, and the frequency is rising. Today's women are employed, and globalization has increased our awareness of gender equality. In the past, women could only perform domestic tasks. Due to the changing environment, women now face competition from males in all sectors. Women are achieving high levels of achievement in a variety of professions, including business, science, education, and corporate. Whether at home, away from the house, or at business, women's safety is very important. The recent crimes committed against women in the nation are horrifying and terrifying. Due to these incidents, women's safety has gained a lot of attention. According to the statistics, it is found that every two out of three women have suffered trauma in the last year.

According to a study of female respondents, women are reportedly losing confidence due to these instances. According to a poll conducted by the Women and Child Development Department of the Indian government, around 80% of women in the capital city are concerned about their safety. Women are harassed during the day at their homes, places of employment, or other locations like streets, clubs, etc., not just at night or in the evening. The survey reveals that the lack of a gender-friendly environment and improperly functioning infrastructure, such as the use of alcohol and drugs in public places, inadequate lighting, unsafe public restrooms, unsafe sidewalks, an ineffective police force, a lack of properly operating helpline numbers, etc., are to blame for safety concerns.

A significant portion of women doesn't believe that the police can stop incidents of harassment. Understanding and resolving this issue of women's safety is urgently needed so that they can develop similar to men in their own nation.

➤ *Limitations of Existing Work*

When women are in a risky scenario, there are several applications for their safety. The limitation of these programmes to sending alert messages exclusively to contacts that have been stored is a drawback. There are fewer opportunities for women to escape risky circumstances as a result of past systems. Previous proposals used Google geolocation monitoring technology to follow the women's whereabouts, but it lacked a defined perimeter.

Additionally, one of the contacts will get a call. Although there is occasionally a chance that people won't see the SMS, after the call, they become alert and can quickly recognise when one of their loved ones is in danger by looking at the SMS.

➤ *System Architecture*

An architecture diagram is a type of system diagram used to represent interactions, restrictions, and boundaries between components as well as the overall structure of a software system. It is a crucial tool since it gives a comprehensive overview of the software system's physical deployment and development roadmap.

The user's data will be kept in the database, which will also be used to produce data that will be sent to the recipient. They will communicate through the programme, and neither the user nor the recipient will be able to directly access any data from the database.

• *Architecture of Android OS:*

The skeleton of the Android framework and its constituents are shown in the following figure:

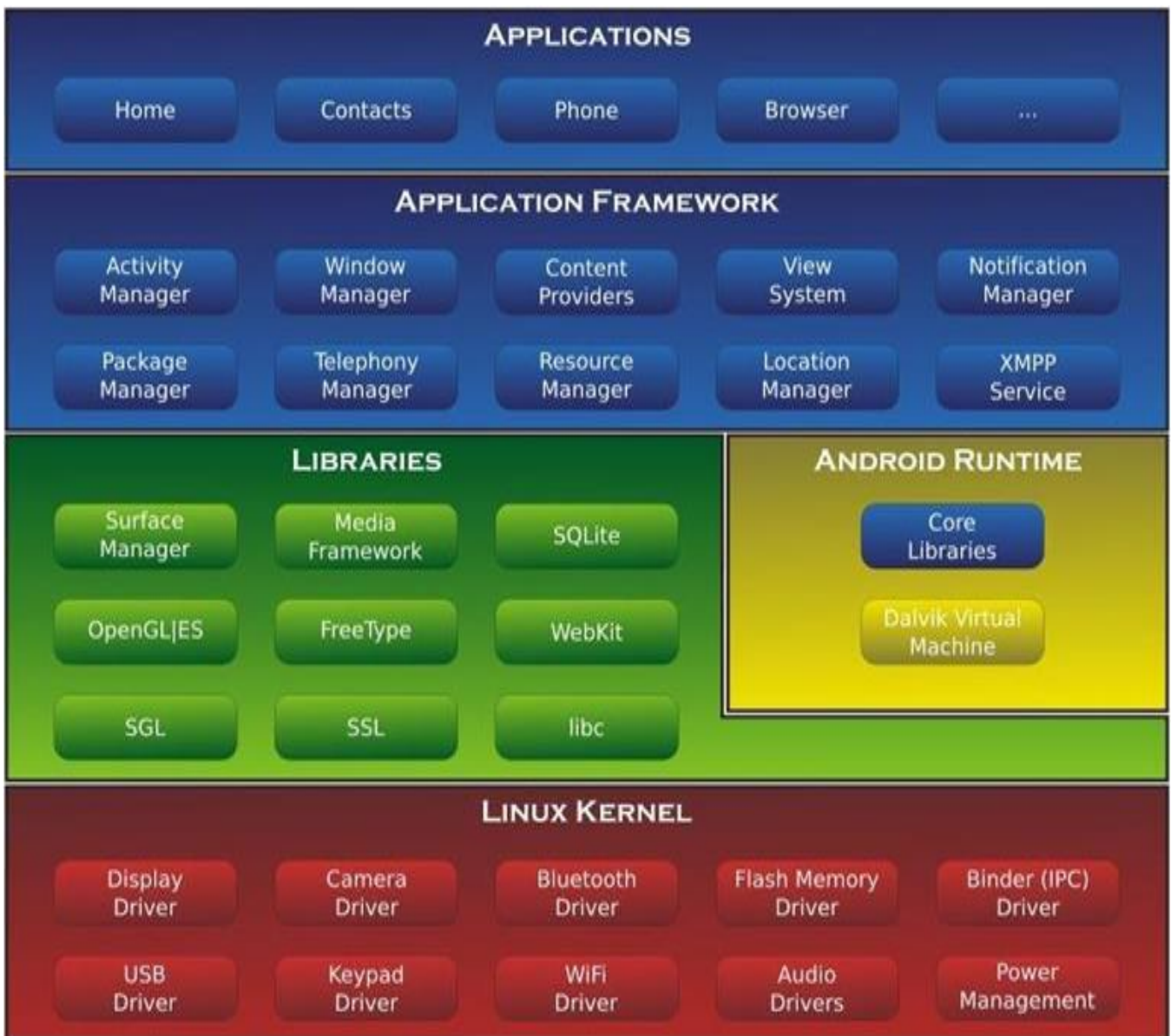


Fig 1 Android Architecture

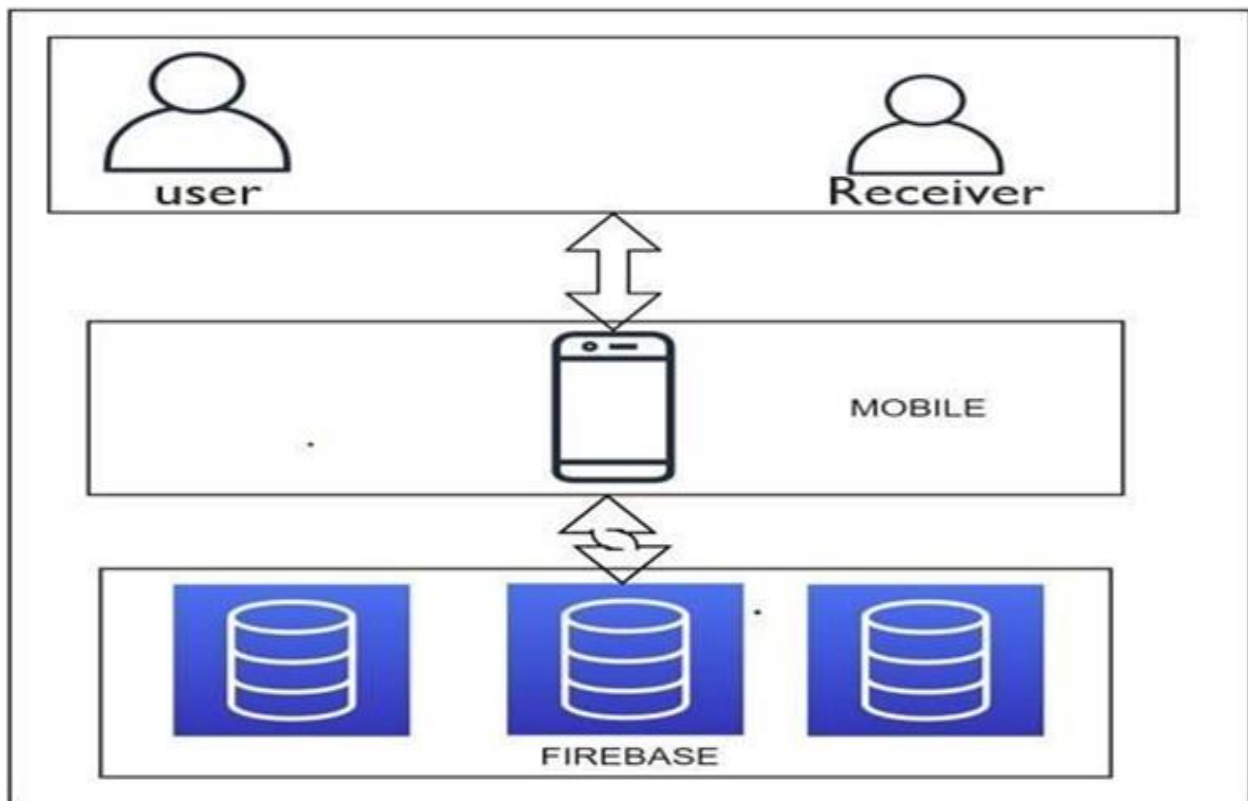


Fig 2 Workflow of Android Application

➤ *Implementation:*

• *Registration Activity:*

The user must provide their cellphone number in this module; shared preferences will permanently keep that information. Utilizing their mobile number, users register with this module.

• *OTP Verification Module:*

Utilizing OTP, this module is used to validate mobile phone numbers. The OTP is delivered to the specified phone number and is automatically detected; if it is not, the user must manually input the OTP. OTP either has to be manually validated or links to the dashboard page if it is automatically verified. OTP verification uses the Firebase database.

The verification ID is then supplied to the user when a callback is received to determine the status of the verification. In the event that the verification is successful, the profile activity begins; otherwise, an error notice is sent. In addition, the user has the option of receiving a call rather than a text message in relation to the OTP.

• *Emergency Contacts Module:*

The emergency contacts module will save the contacts that the user wishes to reach in case of an emergency. The contact is saved in the database, which in the case of this app is a Firebase database, after the user enters the mobile number, name of the person, and the user's relationship with the person, which can be either spouse, parent, friend, brother, sister, daughter, or son. In an emergency, the user can phone one of these contacts to warn them automatically

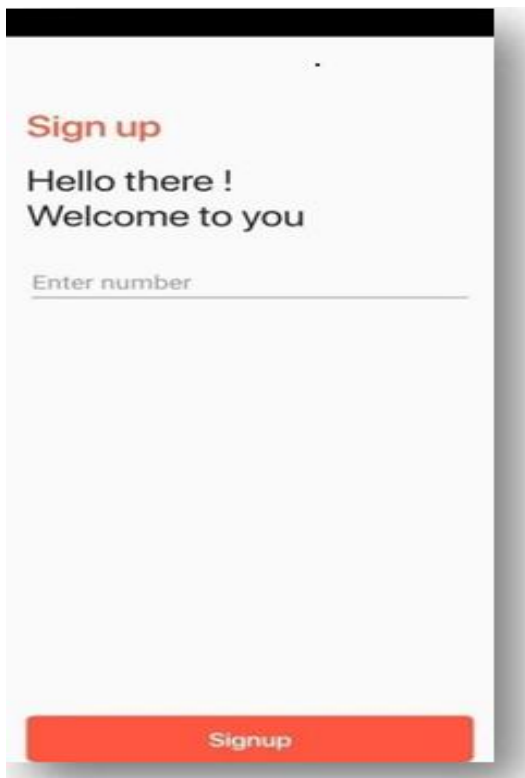
by transmitting the location of the user and the message "I am in danger" to the contacts.

• *Dashboard Module:*

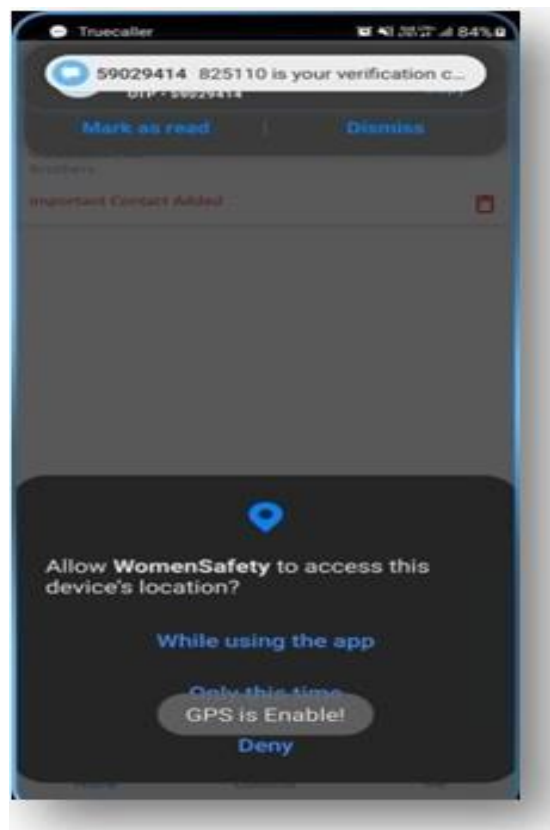
The dashboard module shows the information about the contacts that have been stored in the emergency contacts modules. The user can remove any contacts they no longer need from their dashboard if they have any. After the user's OTP has been verified, the dashboard grants access permissions for location, call, and messages.

• *Volume Key Down Module:*

A crucial task is carried out by the volume down key in an emergency. The on KeyDown function is started when a certain key is pressed three times. After activating this feature, Google Maps is used to determine the user's current location and an SMS with the subject "I am in danger" and the location is sent to all of the contacts that have been saved in the dashboard. In addition to delivering the message with the location, another action is taken, and that is for the user to dial the first contact listed on the dashboard.



Signup Activity: When the app is launched the user need to enter the mobile number and click the button signup. Then it will be redirected to the OTP verification page.



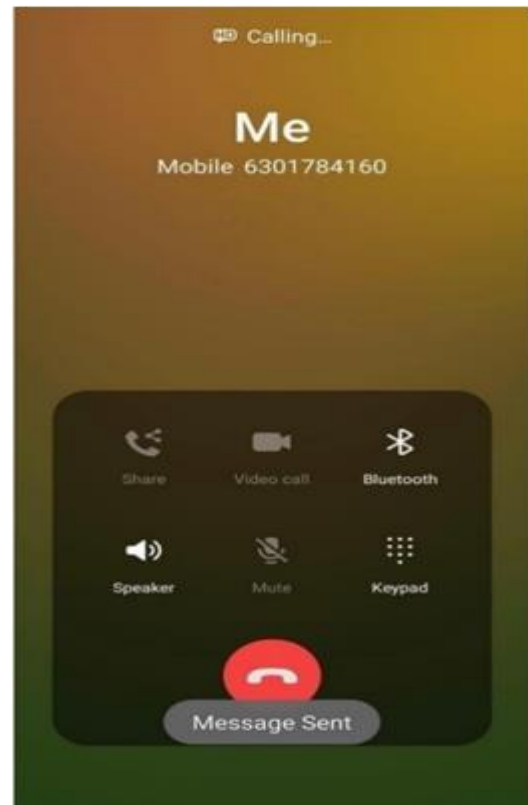
Permissions Dialog Box: After OTP verification the permissions for the location, message and call should appear.



OTP Verification Activity: When the mobile number is entered in the signup page the OTP will be verified automatically if the mobile is active, else you need to enter the OTP manually and click the verify button.

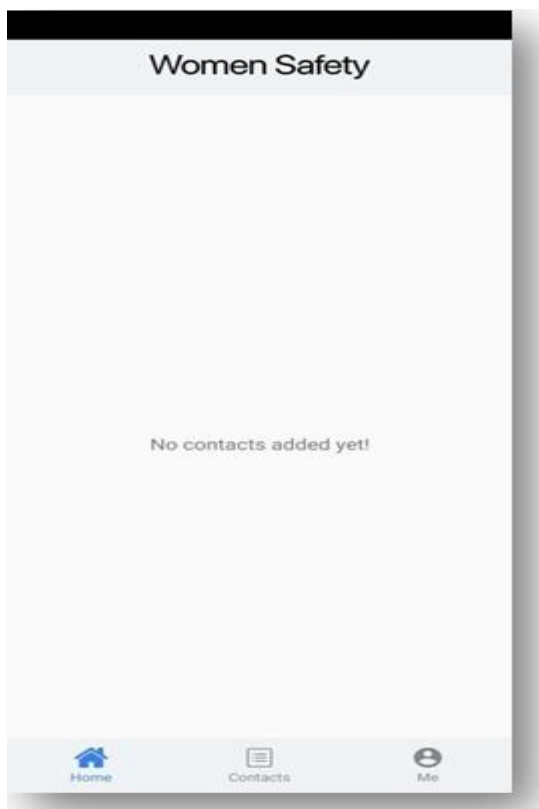


Dashboard: User can migrate to contacts and profile section from the dashboard. Also, the saved contacts will be appeared on the dashboard

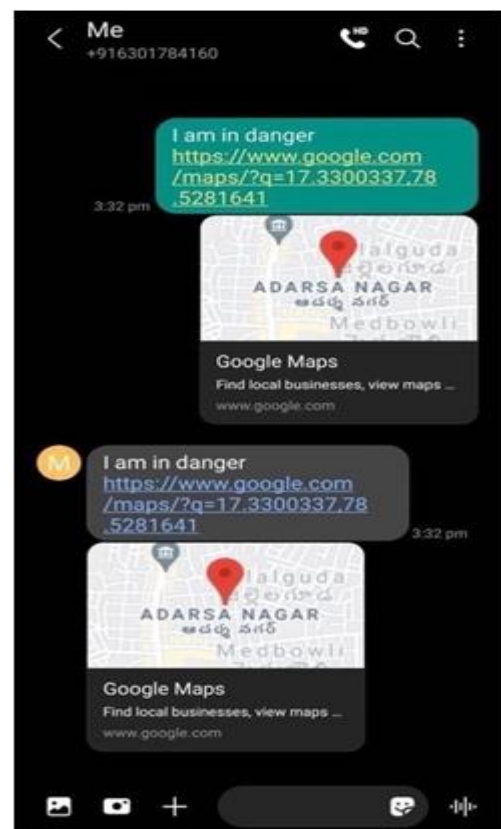


Contacts Activity: User can save the emergency contact number with a name and selecting the relationship category from the drop-down menu and click ✓ button by selecting the “Mark as important” checkbox

When the volume down button of the mobile is pressed thrice consecutively, a call will be initiated to the saved contact numbers and an SMS containing the location of the user with a message will be sent.



When the contacts are saved in the contacts page those will be appeared in the dashboard, user can also delete from the dashboard.



Displaying the location of women.

III. CONCLUSION AND FUTURE SCOPE

“In a safe (community), everyone has an equal right to live without fear of harm or violence, regardless of gender, race, ethnicity, language, handicap, age, or sexual orientation. Since violence belongs to everyone, it is our duty as a community to address it.”

Because the location coordinates are precise, this will aid victims in avoiding assault and registered contacts in getting to the spot as soon as feasible. Features that we have developed will improve the current tracking system. The programme differentiates out from the current system since it delivers GPS coordinates rather than text messages, which makes it straightforward & distinctive. Server space is the sole location where the database must be installed.

In a future update, a voice-activated feature that launches the app calls emergency contacts, and sends SMS can be included. SMS messages to all contacts for emergencies. Automatically taking photos and videos and saving them to Google Drive or other internet stores. Calling helplines to alert surrounding police stations. Included in the application are the locations of surrounding police stations and hospitals.

REFERENCES

- [1]. Authenticate with Firebase on Android using a phone number. (<https://firebase.google.com/docs/auth/android/phone-auth>)
- [2]. Read and Write Data on Android. (<https://firebase.google.com/docs/database/android/read-and-write>)
- [3]. User Interface & Navigation. (<https://developer.android.com/guide/topics/ui>)
- [4]. Issues with Women Safety apps and How to rectify them. (<https://www.testbytes.net/blog/11-women-safety-apps-and-their-issues/>)
- [5]. Android Developers, Location APIs (<http://developer.android.com/google/playservices/location.html>)
- [6]. "WOMEN'S SECURITY", Android App developed by App Soft India, December 17, 2013. (<https://play.google.com/store/apps/details?id=com.Zayaninfotech.security>)
- [7]. "POLICE NEARBY", Android app developed by Big Systems in 2013. (<https://play.google.com/store/apps/details?id=com.smoketech.PoliceNearby>)
- [8]. "SCREAM ALARM", Android app developed by GoPalAppMaker in November,2013 (<https://play.google.com/store/apps/details?id=gopal.appmaker.android.com>)
- [9]. Android App for Women Safety – Research Gate (https://www.researchgate.net/publication/352386903_Android_App_for_Women_Safety)
- [10]. Women Safety App – IJRASET (<https://www.ijraset.com/research-paper/women-safety-app>)